

REMARKS

By the above amendment in the accompanying RCE, claim 1 has been amended to more clearly recite the feature that at least one of the plurality of light emitting tubes has plural kinds of phosphors, and that a luminance factor area of light from one phosphor of the plural kinds of phosphors of the at least one of the plurality of light emitting tubes or a change luminance factor per time of the light of the one phosphor of the plural kinds of phosphors of the at least one of the plurality of light emitting tubes is substantially equal to that of light from any other phosphor of the plural kinds of phosphors of the at least one of the plurality of light emitting tubes in at least one of a luminance rise time when the light source changes from the turned-off state to the turned-on state and a luminance fall time when the light source changes from the turn-on state to the turn-off state, in the manner described in the specification of this application and including, as illustrated in connection with the elected species. In this regard, it is noted that the Examiner has withdrawn claims 7 - 8 and 11 - 30 from consideration as not being directed to the elected species, even though applicants submit that claim 1, as amended, is a generic claim and claim 1 is the only independent claim in this application. Furthermore, by the present amendment, dependent claims, under consideration and withdrawn, have been amended in accordance with the language of claim 1 including amendment of objected to claim 5 and objected to claim 10 of objected to claims 5, 6 and 10, noting that such claims have been retained in dependent form. Also, by the present amendment, newly added dependent claims 31 - 33 have been presented, which are readable on the elected species, and should be considered with claims 1 - 6, 9 and 10 under consideration.

Turning to the present amendment of the claims, the Examiner appears to raise questions concerning whether a light emitting tube in accordance with the recited features of the claims may contain "one phosphor". To avoid any such misunderstanding, claim 1 has been amended to recite the feature of a at least one of the plurality of light emitting tubes having plural kinds of phosphors, and thereafter reciting the feature of luminance factor area or change in luminance factor per time of light from one phosphor of the plural kinds of phosphors of the at least one light emitting tube or a change in luminance factor per time of the light of the one phosphor of the plural kinds of phosphors of the at least one light emitting tube is substantially equal to that of light from any other phosphor of the plural kinds of phosphors of the at least one light emitting tube in at least one of a luminance rise time and a luminance fall time, as illustrated and described in connection with the elected species. That is, the present invention is directed to overcoming the problem of color deviation, when using plural phosphors in a light emitting tube of a liquid crystal display, and overcomes the color deviation due to different phosphors referred to as a problem of "color misregistration", as described at pages 5 - 7 of the specification of this application. As described a fluorescent tube which is filled with a plurality of fluorescent materials such as a red color phosphor, a green color phosphor and a blue color phosphor, the rise time of luminance and the fall time of luminance for the different color phosphors have different speeds. Thus, as described in the paragraph bridging pages 6 and 7 of the specification, the luminance rise time and the luminance fall time for the blue phosphor material is generally shorter than 1msec, the luminance rise and the luminance fall time of the red phosphor material is in a range of 3 msec to 4 msec, and the luminance rise time and luminance fall time of the green phosphor material is generally in a range from 6

msec to 7 msec. In accordance with the present invention, as recited in claim 1, control is effected so that a luminance factor area of light from one phosphor of the plural kinds of phosphors of the at least one of the plurality of light emitting tubes or a change in luminance factor per time of the light of the one phosphor of the plural kinds of phosphors of the at least one of the plurality of the light emitting tubes is substantially equal to that of light from any other phosphor of the plural kinds of phosphors of the at least one of the plurality of light emitting tubes in at least one of luminance rise time and a luminance fall time. That is, in accordance with the present invention, by applying appropriate driving currents, the shortest time for one phosphor is increased, and the longest time for another phosphor is decreased so that the times for the one and any other of the different phosphors becomes substantially equal to one another in luminance rise time and luminance fall time, as recited in claim 1 and the dependent claims of this application. Again, applicants submit that claim 1 is a generic claim and upon allowance of claim 1, the dependent claims under consideration should be considered allowable therewith and likewise, those claims which stand withdrawn from consideration and depend from claim 1, either directly or indirectly, should be considered and found allowable.

The rejection of claims 1 - 4 and 9 under 35 USC 102(e) as being anticipated by HIRAKATA (US 2002/0036608), is traversed, insofar as it is applicable to the present claims, and applicants request reconsideration and withdrawal of the rejection.

As to the requirements to support a rejection under 35 USC §102, reference is made to the decision of In re Robertson, 49 USPQ 2d 1949 (Fed. Cir. 1999), wherein the court pointed out that anticipation under 35 USC §102 requires that each and every element as set forth in the claim is found, either expressly or inherently

described in a single prior art reference. As noted by the court, if the prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if the element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Moreover, the court pointed out that inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

In applying Hirakata to the claims, the Examiner utilizes the language of the claim, but recognizes that Hirakata fails to disclose the recited features in relation to individual phosphors. That is, the Examiner states in the first full paragraph at page 3 of the Office Action with respect to Hirakata that:

As shown in Fig. 18b-e, increasing the current shrinks the period of rise and fall times of the backlight brightness. Since this backlight brightness measurement is take as a whole, however includes multiple colored phosphors [0192], it is understood that shrinking these waveforms shrinks the rise and fall times of each phosphors making them substantially equal. Further, there is no mention of any phosphor extremes that might attribute to longer rise/fall times than those illustrated: Fig. 10, 11d and 18b-e. (emphasis added).

Thus, as recognized by the Examiner, Hirakata only describes backlight brightness as a whole and provides no disclosure or teaching relating to individual rise and fall times of one phosphor and any other of the different kinds of phosphors of one light emitting tube, which, as described in the specification of this application, which phosphors may include red, green and blue phosphors having different rise and fall times from one another. Further, Hirakata also provides no disclosure or teaching of controlling the rise and fall times of the individual phosphors so as to be substantially equal to one another, in the manner recited in claim 1 and the dependent claims. As

noted above, such features have now been clearly set forth in claim 1 and the dependent claims, and applicants submit that such features are not disclosed by Hirakata in the sense of 35 USC 102 or rendered obvious in the sense of 35 USC 103, such that applicants submit that claim 1 and the dependent claims recite features which patentably distinguish over the Hirakata such that all claims should be considered allowable thereover.

With respect to newly added claims 31 - 33, applicants submit that Hirakata fails to disclose or teach the features of such claims including that the current applied to the at least one of plurality of light emitting tubes has at least two values or that the current has a step-shape or that the current has a pulse shape. Thus, the newly added claims which are readable on the elected species recite further features which patentably distinguish over the cited art and should be considered allowable thereover.

With respect to the claims which stand withdrawn from consideration, applicants submit that such claims depend directly or indirectly from claim 1 and since claim 1 patentably distinguishes over the cited art, as discussed above, these claims which stand withdrawn from consideration, should be considered and found allowable therewith.


For the foregoing reasons, applicants submit that all claims present in this application should now be in condition for allowance and issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli,

Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 1113.45152X00),
and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

/Melvin Kraus/ 
Melvin Kraus
Registration No. 22,466

MK/jla
(703) 312-6600